

Indiana Office of Community and Rural Affairs

Disaster Recovery and Mitigation Planning
Ft. Worth, Texas
February 15, 2012

Floods

- Indiana's costliest hazard
- State ranks 5th in annual median flood damages
- 2008 was particularly devastating.



Impacts on Indiana Communities

- Loss of life
- Evacuations
- Large scale property losses
- Large scale infrastructure damage
- 3 major federal Disaster Declarations in 2008 alone
- Agricultural effects



More Resilient Communities

OCRA wanted to use funds made available under the IKE Supplemental to help Indiana communities recover and become more resilient to future flood hazards.

USACE Silver Jackets

The program's primary goals are to:

- Create or supplement a mechanism to collaboratively address risk management issues, prioritize those issues, and implement solutions
- Increase and improve risk communication through a unified interagency effort
- Leverage information and resources, including providing access to such national programs as FEMA's RiskMAP program and USACE's Levee Inventory and Assessment Initiative
- Provide focused, coordinated hazard mitigation assistance in implementing high-priority actions such as those identified by state mitigation plans
- Identify gaps among the various agency programs and/or barriers to implementation, such as conflicting agency policies or authorities, and provide recommendations for addressing these issues.

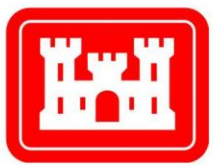




Legend

- Active Intergovernmental Flood Risk Management Team
- Ongoing Effort to Develop Team
- * Fully Signed Team Charter

Federal and National Partners



FEMA



Many Agencies



One Solution

State, Local, and Educational Partners



Planning Projects

- Seven projects funded through CDBG Disaster Recovery, administered by OCRA
- Each designed as a forward looking mitigation activity to help Indiana communities become more resilient to flood hazards
- Also leveraged other fund sources (i.e. USACE, USGS, State & local funds)
- \$13,400,310 allocated for recovery/mitigation planning projects

The Projects

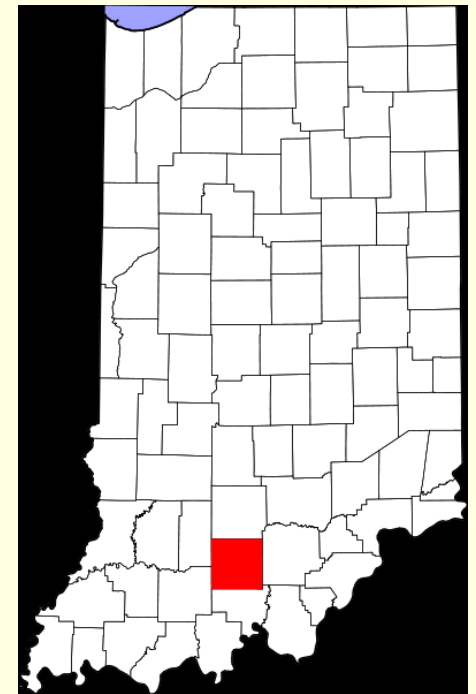
- National Hydrography Dataset
- Orange County Flood Response Model
- Flood Inundation Mapping
- Fluvial Erosion Hazards
- Statewide LIDAR
- RiskMAP
- Indiana Floodplain Information Portal

National Hydrography Dataset

- NHD is hydrologically connected, allowing for its use in detailed hydrologic modeling
- This GIS layer is essential to quality floodplain mapping, and has many uses
- Current resolution is compiled at a scale of 1:24,000
- Project resolution will be compiled at a scale of 1:2,400 or better
- Stream reaches will be captured up to a 6 acre watershed limit

Orange County

- Southern Indiana County with a long history of flood damage
- Compounded by complex karst topography



Orange County

- The ISJ member agencies are developing a hydrologic response model that will predict how streams respond to rainfall
- This will help county communities develop mitigation strategies and plan growth to minimize flood damages
- INDOT, Local, USACE, and USGS funds were leveraged to install 5 streamgages for early flood warning and to calibrate the model

Flood Inundation Mapping

- This project is building flood inundation map “libraries” tied to 23 USGS streamgages and collocated NWS flood forecast points
- Now instead of just getting river levels at a point on a stream, the estimated flood depth and extent throughout the community can be seen.
- A planning, response, recover, and mitigation tool

Web Portal



USGS Home
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USGS Flood Inundation Mapping Science

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FLOOD-INUNDATION PROJECTS

Georgia

- ◆ [Flint River at Albany](#)

Illinois

- ◆ [Du Page County](#)
- ◆ [Lake County](#)

Indiana

- ◆ [Flood of June 7-9, 2008](#)

Kansas

- ◆ [Cowskin Creek, Wichita](#)

Missouri

- ◆ [Upper Blue River, Indian Creek, and Dyke Branch](#)

North Carolina

- ◆ [LIDAR Applications, Tar River Basin](#)
- ◆ [Tar River Basin Mapping](#)
- ◆ [Tar River Basin Mapping \(NOAA/NWS/AHPS\)](#)

Ohio

- ◆ [Blanchard River, Findlay](#)
- ◆ [Blanchard River, Findlay \(NOAA/NWS/AHPS\) -](#)

Washington

U.S. Geological Survey Flood Inundation Mapping Science

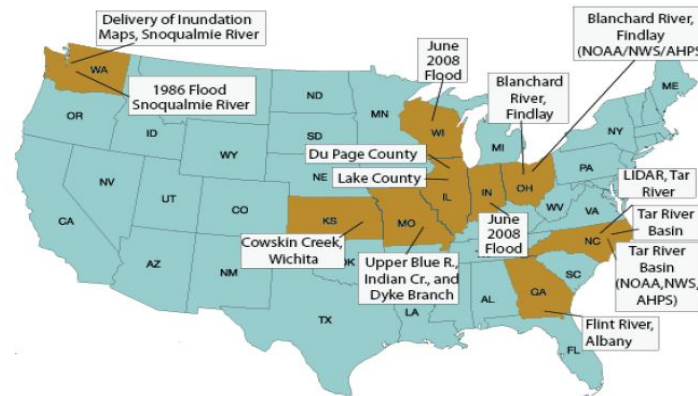
A powerful new tool for flood response and mitigation are digital geospatial flood-inundation maps that show flood water extent and depth on the land surface. Because floods are the leading cause of natural-disaster losses, the U.S. Geological Survey (USGS) is actively involved in the development of flood inundation mapping across the Nation pursuant to its major science strategy goal of reducing the vulnerability of the people and areas most at risk from natural hazards. Working with partners including the National Weather Service (NWS), U.S. Army Corps of Engineers (USACE), the Federal Emergency Management Agency (FEMA), state agencies, local agencies, and universities, the USGS is providing flood inundation mapping science resources to help build more resilient communities.

USGS Flood Inundation Mapping Science Focus Areas

The USGS is working in the following focus areas for flood inundation mapping science:

- ◆ [Flood documentation studies](#)
- ◆ [Static flood-inundation map libraries](#)
- ◆ [Real-time dynamic flood inundation mapping](#)

USGS Flood Inundation Mapping Science Projects, by State



http://water.usgs.gov/osw/flood_inundation/

Fluvial Erosion Hazards (FEH)

- Inundation is not the only flood hazard
- **Erosion** hazards are significant and can cause more dollar damage
- Transportation infrastructure particularly vulnerable



Fluvial Erosion Hazards



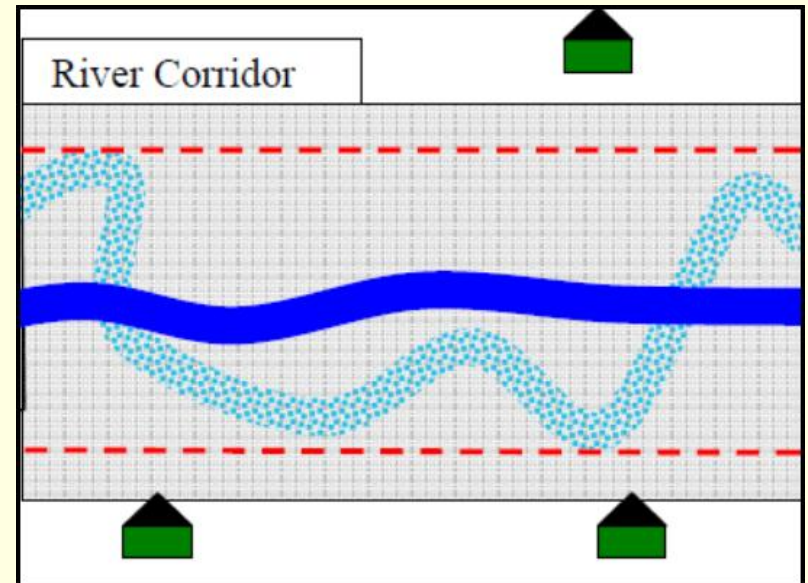
- This project seeks to develop those tools.

- Pose a significant risk to IN communities yet we did not have the tools for planning and mitigation.



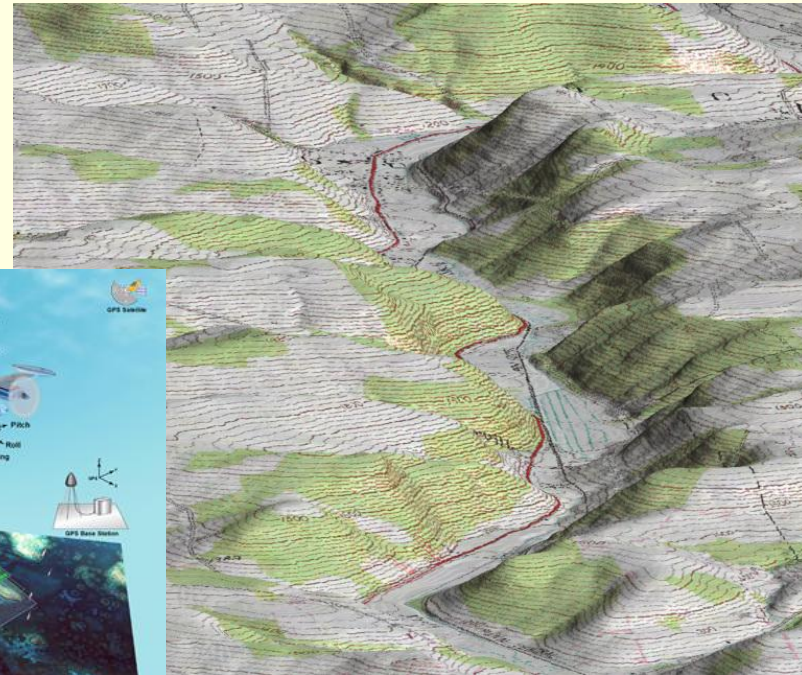
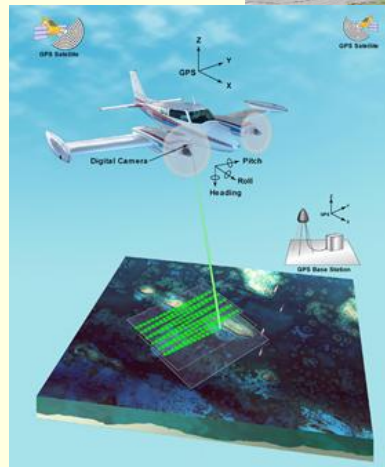
FEH Deliverables

- FEH Mapping for selected streams
- Silver Jackets facilitated presentations and workshops
- Assessment & mitigation tools to help communities identify and mitigate FEH impacts



Statewide LIDAR Project

- Light Detection And Ranging (LIDAR)
- High resolution ground elevations (DEMs)
- Ancillary data – i.e. floodplain mapping
- Better imagery
 - Planning/Development
 - Zoning
 - Studies



Risk MAP

- FEMA's new mapping initiative, mainly focused on enhancement of information of streams that are already mapped on the Digital Flood Insurance Rate Maps
- Approximately 12,500 miles of unmapped streams in Indiana
- Project will map approximately 3,200 miles of unmapped streams and perform detailed studies of four stream reaches

Indiana Floodplain Information Portal (INFIP)

- INFIP operates as a web based portal that relates IDNR applications and databases to enhanced mapping solutions and information repositories. The portal includes a “Google Earth” type map of DFIRM floodplain information including an address finder
- Project will add four additional functions to the portal: enhanced reporting capabilities, a tool to detect floodplain status change, development of a hydrologic model mgmt system, and a module to display and gather high water mark information

Accomplishments

- Projects are on track to be completed in calendar year 2013
- The projects are complimentary and will help provide a comprehensive approach to mitigation of flood hazards
- State & local hazard mitigation plans will incorporate the new products
- The scale of work would not have been possible without the inter-agency participation of Silver Jackets

Summary

- What would we do again?
- What was most challenging?
- What didn't work?
- What would we change?

For More Information

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